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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,527	11/19/2003	Hyung Dal Joo	3449-0238P	5578

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EXAMINER
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HODGES, MATTHEW P

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/715,527

Applicant(s)

JOO ET AL

Examiner

Matt P. Hodges

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-55 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-55 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/27/2005.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

**DETAILED ACTION*****Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the yoke placement portion must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 2879

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5-22, 24-39, and 41-55 are rejected under 35 U.S.C. 102(b) as being anticipated by van der Meer et al. (US 4,730,145).

Regarding claims 1-3, and 7, van der Meer discloses (see figure 1) a cathode ray tube including a panel, funnel, electron gun (5), and a deflection yoke (6). The deflection yoke further includes a horizontal deflection coil (7), vertical deflection coil (8), holder, and a ferrite core (9). The ferrite core is 4mm thick. (Column 3 lines 33-50) and (Column 4 lines 9-19).

The functional language “for reducing a leakage flux on a return path of magnetic fields generated by the horizontal and vertical deflection coils” has not been given patentable weight because it is narrative in form. In order to be given patentable weight, a functional recitation must be expressed as a “means” for performing the specified function, as set forth in 35 U.S.C. § 112, 6<sup>th</sup> paragraph, and must be supported by recitation in the claim of sufficient structure to warrant the presence of the functional language.

Regarding claim 5, van der Meer further discloses the length of the ferrite core being 44mm. (Column 5 lines 1-6).

Regarding claim 6, van der Meer further discloses the cross section of the ferrite core being circular. (See figure 2a).

Regarding claims 8 and 9, the ferrite core is uniformly 4mm thick and thus the ratio of any two maximum thicknesses is equal to 1.

Regarding claim 10, van der Meer further discloses the use of a divisional ferrite core. (Column 3 lines 45-65).

Art Unit: 2879

Regarding claims 11 and 13, van der Meer further discloses the use of the ferrite core in either a color display tube or a data graphic display tube.

Regarding claim 12, van der Meer further discloses the maximum outer diameter of the ferrite core at the neck portion being 57.5 while the maximum thickness of the ferrite core is 4mm. However van der Meer further discloses the optional use of ferrite core thickness of between 6mm and 2mm. Using a value of 5mm (which is inside the enabled range) this leads to the maximum inside diameter of 47.5 and a ratio of the diameter to the thickness of 9.5. (Column 4 lines 12-19) and (Column 2 lines 35-42).

Regarding claim 14, van der Meer further discloses the maximum inner diameter of the ferrite core at the neck portion being 49.5 while the maximum thickness of the ferrite core is 4mm. This leads to a ratio of the diameter to the thickness of 12.3. (Column 4 lines 12-19).

Regarding claim 15 and 16, the maximum thickness at all points of the ferrite core is 4mm. (See rejection of claim 1).

Regarding claims 17-19, van der Meer further discloses the use of saddle deflection coils for both the horizontal and vertical deflection coils along with vertical toroidal deflection coils. (Column 4 lines 15-20) and (Column 3 lines 45-50).

Regarding claims 20-22, and 26, claims 20-22, and 26 are rejected for the same reasons as disclosed in the rejections of claims 15 and 1 above.

Regarding claim 24, van der Meer further discloses the length of the ferrite core being 44mm. (Column 5 lines 1-6).

Regarding claim 25, van der Meer further discloses the cross section of the ferrite core being circular. (See figure 2a).

Art Unit: 2879

Regarding claims 27 and 28, the ferrite core is uniformly 4mm thick and thus the ratio of any two maximum thicknesses is equal to 1.

Regarding claim 29, van der Meer further discloses the use of a divisional ferrite core. (Column 3 lines 45-65).

Regarding claims 30 and 32, van der Meer further discloses the use of the ferrite core in either a color display tube or a data graphic display tube.

Regarding claim 31, van der Meer further discloses the maximum outer diameter of the ferrite core at the neck portion being 57.5 while the maximum thickness of the ferrite core is 4mm. However van der Meer further discloses the optional use of ferrite core thickness of between 6mm and 2mm. Using a value of 5mm (which is inside the enabled range) this leads to the maximum inside diameter of 47.5 and a ratio of the diameter to the thickness of 9.5. (Column 4 lines 12-19) and (Column 2 lines 35-42).

Regarding claim 33, van der Meer further discloses the maximum inner diameter of the ferrite core at the neck portion being 49.5 while the maximum thickness of the ferrite core is 4mm. This leads to a ratio of the diameter to the thickness of 12.3. (Column 4 lines 12-19).

Regarding claims 34-36, van der Meer further discloses the use of saddle deflection coils for both the horizontal and vertical deflection coils along with vertical toroidal deflection coils. (Column 4 lines 15-20) and (Column 3 lines 45-50).

Regarding claims 37-39, and 43, claims 37-39, and 43 are rejected for the same reasons as disclosed in the rejections of claim 1 above and further where the deflection yoke is attached to the funnel portion of the tube. The funnel portion being circular near the electron gun and rectangular at the display side and thus transitioning between circular and non-circular in the period between the two sides.

Art Unit: 2879

Regarding claim 41, van der Meer further discloses the length of the ferrite core being 44mm. (Column 5 lines 1-6).

Regarding claim 42, van der Meer further discloses the cross section of the ferrite core being circular. (See figure 2a).

Regarding claims 44 and 45, the ferrite core is uniformly 4mm thick and thus the ratio of any two maximum thicknesses is equal to 1.

Regarding claim 46, van der Meer further discloses the use of a divisional ferrite core. (Column 3 lines 45-65).

Regarding claims 47 and 49, van der Meer further discloses the use of the ferrite core in either a color display tube or a data graphic display tube.

Regarding claim 48, van der Meer further discloses the maximum outer diameter of the ferrite core at the neck portion being 57.5 while the maximum thickness of the ferrite core is 4mm. However van der Meer further discloses the optional use of ferrite core thickness of between 6mm and 2mm. Using a value of 5mm (which is inside the enabled range) this leads to the maximum inside diameter of 47.5 and a ratio of the diameter to the thickness of 9.5. (Column 4 lines 12-19) and (Column 2 lines 35-42).

Regarding claim 50, van der Meer further discloses the maximum inner diameter of the ferrite core at the neck portion being 49.5 while the maximum thickness of the ferrite core is 4mm. This leads to a ratio of the diameter to the thickness of 12.3. (Column 4 lines 12-19).

Regarding claim 51 and 52, the maximum thickness at all points of the ferrite core is 4mm. (See rejection of claim 1).

Regarding claims 53-55, van der Meer further discloses the use of saddle deflection coils for both the horizontal and vertical deflection coils along with vertical toroidal deflection coils. (Column 4 lines 15-20) and (Column 3 lines 45-50).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 23, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over van der Meer et al. (US 4,730,145) in view of Okuyama et al. (US 6,166,484).

Regarding claims 4, 23, and 40, van der Meer discloses the device as claimed (see rejections of claims 1, 20, and 27 above) but does not appear to specify the length of the ferrite core being between 10% and 90% of the total length of the horizontal deflection coil. However Okuyama, in the same field of endeavor, discloses the use of ferrite cores being between 31% and 75% of the length of the horizontal deflection coil in order to advantageously provide suitable magnetic characteristics for wider deflection angles and smaller funnel necks. (Column 7 lines 38-47). The combination of smaller funnel necks and wider deflection angles allows for advantageous smaller and lighter tubes. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the use of smaller ferrite cores as taught by Okuyama into the device as disclosed by van der Meer in order to provide advantageously smaller and lighter tubes.



Art Unit: 2879

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lee (US 2003/0209967) discloses the use of thin ferrite cores.

Sakurai et. al. (US 6,737,818) discloses the use of thin ferrite cores.

### ***Contact Information***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matt P Hodges whose telephone number is (571) 272-2454. The examiner can normally be reached on 7:30 AM to 4:00 PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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**JOSEPH WILLIAMS**  
**PRIMARY EXAMINER**